# Section 1: Simple SELECT Exercises

## Which actors first name is 'GRETA'?

Hint: Check the case of the data in the column. Match it exactly or use ILIKE to ignore it.

## How long can I take out 'CHICAGO NORTH' for? What will it cost me?

Hint: Check the case of the data in the column.

## What 'G' rated films are exactly 48 minutes long?

Hint: Use the = operator.

## I'm looking for a short (no more than 1 hour) cheap movie (less than $1) about a dentist. What can you offer me?

Hint: AND. Watch for the case of the data.

## I'm looking for an 'Emotional Drama'. It's about either a 'Squirrel' or a 'Dog', I think. Do you have that?

Hint: Don't try a join here (it's tempting), just look in the description.

## Data Dictionary

Useful columns in the “**film**” table:

|  |  |
| --- | --- |
| film\_id | A unique id for every film |
| title | Title of the film |
| description | Description of the film |
| release\_year | Year of release |
| rental\_duration | How long (days) is film allowed to be rented out for? |
| rental\_rate | How much does renting this film cost? |
| length | How long (minutes) is this film? |
| rating | What is the MPAA rating of the film? (e.g. G, PG, R) |
| replacement\_cost | How much will buying a new copy cost? |

Useful columns in the “**actor**" table:

|  |  |
| --- | --- |
| actor\_id | A unique id for every actor |
| first\_name | First name of the actor |
| last\_name | Last name of the actor |

## Useful Functions

|  |  |
| --- | --- |
| LIKE | Operator for WHERE clause, uses '%' as a global match character. |
| ILIKE | Case insensitive version of LIKE. |
| = | Operator for WHERE clause, tests strict equality. |
| > | Operator for WHERE clause, tests greater-than relationship. |
| < | Operator for WHERE clause, tests less-than relationship. |
| ~ | Regular expression match. |
| ~\* | Case insensitive regular expression match. |

# Section 2: Aggregates and Ordering

## What is the maximum replacement cost of a film?

Hint: Max()

## What is average film rental rate, summarized by the allowed rental durations?

Hint: Avg(), GROUP BY

## What 10 films about a ‘Cat’ are the cheapest to rent?

Hint: ORDER, LIMIT, watch for case

## How many films have a ‘Monk’ and a ‘Dog’ in them?

Hint: Count(), LIMIT, watch for case

## How strong is the correlation between movie length and rental duration?

Hint: Corr()

## Data Dictionary

Useful columns in the “**film**” table:

|  |  |
| --- | --- |
| film\_id | A unique id for every film |
| title | Title of the film |
| description | Description of the film |
| rental\_duration | How long (days) is film allowed to be rented out for? |
| rental\_rate | How much does renting this film cost? |
| length | How long (minutes) is this film? |
| replacement\_cost | How much will buying a new copy cost? |

## Useful Functions

Remember, order of terms in a query matters:

SELECT ...

FROM ...

WHERE ...

GROUP BY ...

ORDER BY ...

LIMIT

|  |  |
| --- | --- |
| Sum([field]) | An aggregate function that returns the total value of the field over all records in the query. |
| LIMIT n | Restrict the query to return only the first “n” rows. |
| ORDER BY [field] | Return the query in order sorted by the field. |
| ORDER BY [field] DESC ORDER BY [field] ASC | Return the query in descending/ascending order sorted by the field. |
| GROUP BY [field] | Return aggregate functions using categories defined by the field |
| Avg ([field]) | Aggregate that returns the average value of the field over all records in the group |
| Count ([field]) | Aggregate that returns the number of records in the group |
| Min ([field]) | Aggregate that returns the minimum value of the field over all records in the group |
| Max ([field]) | Aggregate that returns the maximum value of the field over all records in the group |
| Corr([field1], [field2]) | Aggregate that returns the correlations between the values in the provided fields, over the query groups |

# Section 3: Joins

## Who else acted in ‘MEMENTO ZOOLANDER’ with Kirsten Akroyd?

Hint: Join film to film\_actor to actor, watch for case in the title column

## How many films are in each category?

Hint: Join film to film\_category to category, Count()

## Do any of the films in the 'Music' category have 'Music' in their description?

Hint: Maybe, maybe not.

## What is the most common category of movie made by actresses named 'Julia'?

Hint: Join actor to film\_actor to film to film\_category to category. Watch for case on the first name.

## How much revenue did the movie store generate in January of 2007? How much of that was late fees?

For SQL experts only! Get out your ER diagram!

## Useful Functions

|  |  |
| --- | --- |
| JOIN [column] ON [condition] | Join tables using a true/false condition (this will be important when we get to spatial and don’t have foreign keys to work with) |
| JOIN [column] USING ([key]) | Joins tables using a key that has same column name in both tables. |
| Sum([field]) | Aggregate function returning sum of all inputs. |

Useful columns in the “**film**” table:

|  |  |
| --- | --- |
| film\_id | A unique id for every film |
| title | Title of the film |
| release\_year | Year of release |
| rental\_duration | How long (days) is film allowed to be rented out for? |
| rental\_rate | How much does renting this film cost? |
| length | How long (minutes) is this film? |

Useful columns in the “**actor**” table:

|  |  |
| --- | --- |
| actor\_id | A unique id for every actor |
| first\_name | First name of the actor |
| last\_name | Last name of the actor |

Useful columns in the “**film\_actor**” table:

|  |  |
| --- | --- |
| actor\_id | Actor associated with film |
| film\_id | Film associated with actor |

Useful columns in the “**film\_category**” table:

|  |  |
| --- | --- |
| category\_id | Category associated with film |
| film\_id | Film associated with category |

Useful columns in the “**category**” table:

|  |  |
| --- | --- |
| category\_id | Category unique id |
| name | Human readable category name |

# Section 4: CRUD

## Add a new actor table entry for your favorite thespian.

## Change your thespian's last name to 'SHATNER'.

## Re-rate all the 'G' films as 'PG'.

## Delete payment 16076.

## (Try to) delete film 5. Why doesn't this work?

## Useful Functions

|  |  |
| --- | --- |
| INSERT INTO [table] ([columns]) VALUES ([values]) RETURNING [column] | Add a record to a table |
| UPDATE [table] SET [column] = [value] WHERE [condition] | Alter existing record(s) in a table. |
| DELETE FROM [table] WHERE [condition] | Delete record(s) from a table. |

Useful columns in the “**film**” table:

|  |  |
| --- | --- |
| film\_id | A unique id for every film |
| title | Title of the film |
| release\_year | Year of release |
| rental\_duration | How long (days) is film allowed to be rented out for? |
| rating | MPAA rating |
| length | How long (minutes) is this film? |

Useful columns in the “**actor**” table:

|  |  |
| --- | --- |
| actor\_id | A unique id for every actor |
| first\_name | First name of the actor |
| last\_name | Last name of the actor |

Useful columns in the “**payment**” table:

|  |  |
| --- | --- |
| payment\_id | A unique id for every payment |
| amount | Size of payment (dollars) |